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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,921	10/15/2003	Klaus Rudolf	1/1403	7069

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EXAMINER	
JOHNSEN, JASON H	

ART UNIT	PAPER NUMBER
1623	

DATE MAILED: 11/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/685,921	RUDOLF ET AL.	
	Examiner	Art Unit	
	Jason H. Johnsen	1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) *15 and 16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) *1-16* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *N/A* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6/11/04,12/12/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d) filed on 10/25/2002.

Information Disclosure Statement

The information disclosure statements (IDS) submitted on 06/11/04 and 12/12/03 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information disclosure statements.

Election/Restriction

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-14, drawn to compounds of formula I, wherein R^2 and R^3 form a ring according to formula II, and where q is 1, r is 1 and Y is Nitrogen, compositions and method for treatment of headache, including migraine or cluster headaches, classified in various subclasses of class 544 depending on the variables.

II. Claims 1-14, drawn to compounds of formula I, wherein R^2 and R^3 form a ring according to formula II, and where q is 1, r is 1 and Y is carbon, compositions and method for treatment of headache, including migraine or cluster headaches, classified in various subclasses of class 546 depending on the variables.

III. Claims 1-14, drawn to compounds of formula I, wherein R^2 and R^3 do not form a ring according to formula II, and where q is 1, r is 1 and Y is carbon, compositions and method for treatment of headache, including migraine or cluster headaches, classified in various subclasses of class 546 depending on the variables.

IV. Claims 1-14 drawn to compounds and compositions of formula I, wherein R^2 and R^3 form a ring that is not defined by size or identity of each ring atom according to Group I or II classified in various subclasses of class 540, 544, 546 or 548 depending on the variables. **Note:** When choosing this group, further restriction according to the ring formed by Formula II may be required.

V. Claim 15 drawn to a method for treating non-insulin dependent diabetes mellitus classified in various subclasses of class 514.

VI. Claim 16 drawn to methods of use not found in any of groups I-V classified in various subclasses of class 514. **Note:** When choosing this group, further restriction may be required.

Rationale Establishing Patentable Distinctiveness Within Each Group

Each Invention Set listed above is directed to or involves the use or making of compounds which are recognized in the art as being distinct from one another because of their diverse chemical structure, their different chemical properties, modes of action, different effects and reactive conditions (MPEP 806.04, MPEP 808.01). Additionally, the level of skill in the art is not such that one invention would be obvious over either of the other inventions, i.e. they are patentable over each other. Chemical structures which are similar are presumed to function similarly, whereas chemical structures that are not similar are not presumed to function similarly. The presumption even for similar chemical structures though is not irrebuttable, but may be overcome by scientific reasoning or evidence showing that the structure of the prior art would not have been expected to function as the structure of the claimed invention. Note that in accordance with the holdings of Application of Papesch, 50 CCPA 1084, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) and In re Lalu, 223 USPQ 1257 (Fed. Cir. 1984), chemical structures are

patentably distinct where the structures are either not structurally similar, or the prior art fails to suggest a function of a claimed compound would have been expected from a similar structure. ***The above Groups represent general areas wherein the inventions are independent and distinct, each from the other because of the following reasons***:

Restriction is proper when there are different inventions and such is not affected by the manner of claiming-i.e. in separate claims or within a single claim. The resultant compounds embraced by different cores constitute structurally dissimilar compounds. Placing all such compounds into the same claim is repugnant to scientific classification as they are separately classified and require separate literature searches. Each of the groups belongs to a separate class and numerous subclasses. To search all the patents under these classes and subclasses would place a substantial burden on the examiner, let alone search of other non-patent literature. Having a common utility among the groups is not enough where, as herein, there is not a substantial structure feature common to all groups. They are made and used independently of each other, are not art-recognized equivalents.

MPEP 806.05(h) permits restriction when more than one use can be shown exists for the compounds claimed. In the instant case uses such as treating headaches, diabetes, asthma, etc. as alleged by applicants are distinct uses irrespective of the mode(s) of action being relied on to treat the disorders. Different uses raise different issues of patentability over corresponding compound/composition claims. Note IN re May 197 USPQ 601; In re Shetty 195 USPQ 753. Therefore, because of the reasons given above, the restriction set forth is proper.

A telephone call was placed to Alan Stempel, attorney of record, on September 2, 2005 in which an election of group I without traverse was obtained. Therefore, the application will be

examined commensurate in scope with this election. Claims 15 and 16 are withdrawn from consideration.

Advisory of Rejoinder

The following is a recitation of M.P.E.P. §821.04, Rejoinder:

> Where product and process claims drawn to independent and distinct inventions are presented in the same application, applicant may be called upon under 35 U.S.C. 121 to elect claims to either the product or process. See MPEP § 806.05(f) and § 806.05(h). The claims to the nonelected invention will be withdrawn from further consideration under 37 CFR 1.142. See MPEP § 809.02© and § 821 through § 821.03. However, if applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims which depend from or otherwise include all the limitations of the allowable product claim will be rejoined.
>
> Where product and process claims are presented in a single application and that application qualifies under the transitional restriction practice pursuant to 37 CFR 1.129(b), applicant may either (1) elect the invention to be searched and examined and pay the fee set forth in 37 CFR 1.17(s) and have the additional inventions searched and examined under 37 CFR 1.129(b)(2), or (2) elect the invention to be searched and examined and not pay the additional fee (37 CFR 1.129(b)(3)). Where no additional fee is paid, if the elected invention is directed to the product and the claims directed to the product are subsequently found patentable, process claims which either depend from or include all the limitations of the allowable product will be rejoined . If applicant chooses to pay the fees to have the additional inventions searched and examined pursuant to 37 CFR 1.129(b)(2), even if the product is found allowable, applicant would not be entitled to a refund of the fees paid under 37 CFR 1.129(b) by arguing that the process claims could have been rejoined. 37 CFR 1.26 states that "[m]oney paid by actual mistake or in excess will be refunded, but a mere change of purpose after the payment of money...will not entitle a party to demand such a return..." The fees paid under 37 CFR 1.129(b) were not paid by actual mistake nor paid in excess, therefore, applicant would not be entitled to a refund.
>
> In the event of rejoinder, the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104 - 1.106. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103, and 112. If the application containing the rejoined claims is not in condition for allowance, the subsequent Office action may be made final, or, if the application was already under final rejection, the next Office action may be an advisory action.

The following is a recitation from paragraph five, "Guidance on Treatment of Product and Process Claims in light of *In re Ochiai, In re Brouwer* and 35 U.S.C. §103(b)" (1184 TMOG 86(March 26, 1996)):

> "However, in the case of an elected product claim, rejoinder will be permitted when a product claim is found allowable and the withdrawn process claim **depends from or otherwise includes all the limitations of** an allowed product claim. Withdrawn process claims not commensurate in scope with an allowed product claim will not be rejoined." (emphasis added)

Therefore, in accordance with M.P.E.P. §821.04 and In re Ochiai, 71 F.3d 1565, 37 USPQ 1127 (Fed. Cir. 1995), rejoinder of product claims with process claims commensurate in scope with the allowed product claims will occur following a finding that the product claims are allowable. Until, such time, a restriction between product claims and process claims is deemed proper. Additionally, in order to retain the right to rejoinder in accordance with the above policy, Applicant is advised that the process claims should be amended during prosecution to maintain either dependency on the product claims or to otherwise include the limitations of the product claims. **Failure to do so may result in a loss of the right to rejoinder.**

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686

F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-14 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-10 of copending Application No. 10/755593 (PG-PUB 2004/0192729). Although the conflicting claims are not identical, they are not patentably distinct from each other because there is significant overlap in these two applications, particularly when instant application's compounds and compositions are defined by Formula II, wherein q and r are each 1 making a six-membered heterocyclic ring structure. Additionally, when instant application's compounds and compositions form a ring with R^4 and R^5, this overlaps with R^1 substituent of co-pending application. Claim 14 of the instant application is drawn to a composition and method of treating acute or prophylactic treatment of headaches generally, as is claim 10 of co-pending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9 and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Klaus et al. (US 6,344,449). Klaus et al. teach the compounds of the instant invention where R^1 is 2-oxoquinzlolinyl, A is Oxygen, X is NH, U and W are CF_3, V is Hydrogen, R^5 is Hydrogen, R^2 and R^3 form a ring, of formula II, and R^4 is 1-methylpiperidin-4-yl (See STN search printout).

Claim Rejections - 35 USC § 103

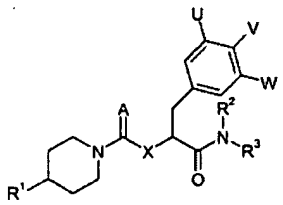
The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klaus et al. (US 6,344,449). Klaus et al. teach specific compounds and compositions of Formula I,



, as well as a general formula encompassing many embodiments of

instant application, and a method of using said compounds and compositions to treat headaches, wherein substituent R^1 denotes a saturated, mono or diunsaturated 5- to 7-membered diaza heterocyclic group; A is an oxygen atom; X is a nitrogen atom; R^2 and R^3 form a six membered 1, 4-diazine heterocyclic ring; Y is nitrogen; R^4 and R^5 form a heterocyclic ring, or R^4 and R^5 taken individually can be any number of subsituents defined in column 6,lines 57-67 or column 7, lines 1-65, defined by R^{10} and R^{12} of US 6,344,449(for general formula see columns 1-6).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings above to obtain the compound as claimed in the instant application. All of the moieties, which are substituted in the instant application, are taught in the art, and the locations of substitution are correlative with the locations of substitution in the art. Obviousness based on similarity of structure and functions entails motivation to make the claimed compound in expectation that compounds similar in structure will have similar properties; therefore, one of ordinary skill in the art would be motivated to make the claimed compounds in searching for new CGRP antagonist compounds (MPEP 2144.09).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 14 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The instant disclosure is not seen to be sufficient to enable the use of compounds of the formula in claim 1 to prevent all kinds of headaches without undue experimentation

Undue experimentation is a conclusion reached by weighing the noted factual considerations set forth in ***In re Wands, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988)***. A conclusion of lack of enablement means that, based on the evidence regarding a fair evaluation of an appropriate combination of these factors, the specification, at the time the application was filed, would not have taught one skilled in the art how to make and/or use the full scope of the claimed invention without undue experimentation.

Claim 14 recites compositions resulting from the compounds of claim 1-11 for use in preventing headaches generally, and migraine and cluster headaches specifically. Applicant gives no actual experimental data showing all of the compounds embraced by the very broad formula I were made to prevent headaches generally. Note that in cases involving physiological activity, "the scope of enablement varies inversely with the degree of unpredictability of the factors involved." *In re Fisher,* 427 F.2d 833, 166 USPQ 18 (CCPA 1970). Since this case involves unpredictable *in vitro* and *in vivo* physiological activities, any evidence presented must be commensurate in scope with the claims and must clearly demonstrate the effectiveness of the claimed compounds. The instant application provides no such evidence.

Furthermore, the instant specification provides no direction or guidance for how to use the disclosed (and claimed) compounds since there are no guidelines for determination of dosage needed to provide the preventive effect and no teaching or date provided which would permit the determination of an effective amount for preventing these disorders. In fact there is no data showing that any one of these compounds can in fact prevent any of these disorders, or treat

many of them as well. Therefore, in view of the breadth of the claims, the chemical nature of the invention, the unpredictability of *in vitro* and *in vivo* correlation, the lack of any working examples, and the lack of any guidance in how to use the claimed compounds and compositions to actually prevent or treat these disorders, it would require an undue amount of experimentation to use the claimed inventions.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Any claim which contains the limitation of Y and Z is indefinite. Y and Z are defined in claim 1, but there is no Y or Z substituent mentioned in Formula I. Additionally, claim 1, and subsequent claims depending from it, are indefinite because Formula I refers to U, V, and W attached to a phenyl ring; however, U, V, and W are not defined in the body of the claim.

Furthermore, claim 1, and subsequent claims depending from it, contain the limitation for of X being a number of substituents, including an imino group. However, the examples found in subsequent claims do not support such a definition. An imino group is a carbon double bonded to nitrogen. However, the examples show X to only be a nitrogen atom, not an imino group. It is indefinite as to which is the correct definition. Subsequently, the examples found in claims 10 and 11 do not have sufficient antecedent basis to support X being only a nitrogen atom.

2. In claim 1, the definition of the substituent R^4 is ambiguous. Does the limitations in the passage spanning from page 216 line 21 to page 218 line 9 apply to all Y^1's or only in the case of Y^1 is equal to carbon?

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jason H. Johnsen** whose telephone number is **571-272-3106**. The examiner can normally be reached on Mon-Friday, 8:30-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. James O. Wilson can be reached on 571-272-0661. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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